

AMENDMENTS TO THE CLAIMS

1-4. (Canceled)

5. (Currently Amended) ~~The A ball screw according to claim 1, further comprising:~~
a screw shaft having a first helical ball rolling groove in an outer periphery thereof;
a nut having a second helical ball rolling groove in an inner periphery thereof;
a plurality of balls arranged in a helical raceway defined by the first and second helical ball rolling grooves,

wherein at least one of the first and second helical ball rolling grooves has a surface with a surface roughness of 0.12 μm or less in average roughness (Ra) along a helical direction of the helical raceway; and

a retainer rotatably supporting the balls between the screw shaft and the nut,
wherein the retainer comprises a plurality of separators interposed between adjacent balls,
each of the separators having concave surfaces on both sides thereof.

6. (Currently Amended) ~~The A ball screw according to claim 1, further comprising:~~
a screw shaft having a first helical ball rolling groove in an outer periphery thereof;
a nut having a second helical ball rolling groove in an inner periphery thereof;
a plurality of balls arranged in a helical raceway defined by the first and second helical ball rolling grooves,

wherein at least one of the first and second helical ball rolling grooves has a surface with a surface roughness of 0.12 μm or less in average roughness (Ra) along a helical direction of the helical raceway; and

a retainer rotatably supporting the balls between the screw shaft and the nut,
wherein the retainer comprises a plurality of pockets for rotatably holding the balls respectively, each of pockets having concave surfaces between which each of said balls is interposed.

7. (Currently Amended) The ball screw according to claim ~~[[1]]~~ 5, wherein each of the balls has an outer diameter of 3.969 mm or less.

8. (Currently Amended) The ball screw according to claim ~~[[2]]~~ 6, wherein each of the balls has an outer diameter of 3.969 mm or less.

9. (Currently Amended) The ball screw according to claim ~~[[3]]~~ 16, wherein each of the balls has an outer diameter of 3.969 mm or less.

10. (Canceled)

11. (Original) The ball screw according to claim 7, wherein each of the balls has an outer diameter of 2.000 mm or more.

12. (Original) The ball screw according to claim 8, wherein each of the balls has an outer diameter of 2.000 mm or more.

13. (Original) The ball screw according to claim 9, wherein each of the balls has an outer diameter of 2.000 mm or more.

14. (Canceled)

15. (Currently Amended) The ball screw according to claim ~~[[1]]~~ 5, wherein the screw shaft has an outer diameter of 32 mm or less.

16. (Currently amended) ~~The A ball screw according to claim 1, further comprising:~~
a screw shaft having a first helical ball rolling groove in an outer periphery thereof;
a nut having a second helical ball rolling groove in an inner periphery thereof;
a plurality of balls arranged in a helical raceway defined by the first and second helical
ball rolling grooves,

wherein at least one of the first and second helical ball rolling grooves has a surface with
a surface roughness of 0.12 μm or less in average roughness (Ra) along a helical direction of the
helical raceway; and

a retainer rotatably supporting the balls between the screw shaft and the nut.

17. (New) The ball screw according to claim 6, wherein the screw shaft has an outer diameter of 32 mm or less.

18. (New) The ball screw according to claim 16, wherein the screw shaft has an outer diameter of 32 mm or less.